

AMENDMENT OF THE CLAIMS

Claim 1 (Currently amended). A cutting tool and track system, comprising:

at least one track element configured to be attached to a surface of a workpiece, the track element including a track member and a rack member supported along the longitudinal length of the track member and defining a transport path;

a carriage assembly configured to ride along and to be guided and supported by the track element;

a carriage drive mechanism arranged to drivingly engage the carriage assembly and to drive the carriage assembly along the track element;

a cutting tool assembly carried by the carriage assembly, the cutting tool assembly including a cutting tool arranged to be rotated about a longitudinal axis and to be fed both along its axis of rotation and transversely of its axis of rotation for cutting a workpiece through a wall thickness of the workpiece; and

a tool driving system connected to and arranged to transmit rotary input motion to the cutting tool;

wherein the track member is substantially flexible to permit bending thereof to generally conform to a geometrical portion of a workpiece.

Claim 2 (Original). The cutting tool and track system according to claim 1, wherein the track element comprises:

at least two supports connected to a bottom surface of the track member and configured to be attached to a workpiece;

wherein each of the supports is configured to be attached to a securing element supported on the workpiece.

Claim 3 (Original). The cutting tool and track system according to claim 2, wherein each of the securing elements includes a mount plate supported on the workpiece and a plurality of studs extending therefrom, the supports configured and arranged to receive and secure to the studs of the securing elements.

Claim 4 (Original). The cutting tool and track system according to claim 2, wherein the securing elements are studs supported on the workpiece, the supports configured and arranged to receive and secure to the studs.

Claim 5 (Currently Amended). The cutting tool and track system according to claim 1, wherein the carriage assembly comprises:

a carriage deck configured to carry the cutting tool assembly and having at least two threaded holes extending therethrough; and

at least two adjustable bearing assemblies received and retained by the threaded holes of the carriage deck, each bearing assembly including a pin element extending through a threaded sleeve member positioned in operative engagement with one of the threaded holes, and a plurality of conical compression-type springs, a ~~distal~~first end of each of the pin ~~element~~ elements engaging a bearing, the at least two bearing ~~assembly~~ assemblies each including a retaining nut engaging the sleeve member and positionable against the carriage.

Claim 6 (Currently Amended). The cutting tool and track system according to claim ~~4~~5, wherein the carriage assembly further comprises a cam arrangement including:

a plurality of cam followers fixed to the carriage deck and arranged to ride along the track member; and

at least two adjustable cam followers adjustably secured to the carriage deck and configured to be positioned against the track member.

Claim 7 (Original). The cutting tool and track system according to claim 1, further comprising:

an angle plate having first and second plate portions oriented perpendicular to one another, said angle plate arranged to support the cutting tool assembly along the first plate portion and be supported to the carriage assembly on the second plate portion.

Claim 8 (Currently Amended). The cutting tool and track system according to claim 1, further comprising a feed assembly including:

an upper plate having an upper hole and arranged to connect to the cutting tool assembly, a ratchet assembly being positioned within the upper hole;

a lower plate having a lower hole and arranged to connect to the ~~first plate portion of the angle plate carriage assembly~~, a feed nut being positioned within the lower hole;

a feed screw extending through the upper ~~holes~~ hole and engaging the ratchet assembly, the feed screw ~~and~~ engaging the feed nut of the lower hole; and

a lever secured to the feed screw, the lever manipulable so as to rotate the feed screw to linearly displace the ~~spindle of the~~ cutting tool assembly ~~in relation to the angle support~~ along its longitudinal axis.

Claim 9 (Currently Amended). The cutting tool and track system according to claim 1, wherein ~~at least two track elements are provided and arranged to be~~ a plurality of the track elements are assembled on a workpiece in an end-to-end relationship defining a continuous transport path.

Claim 10 (Original). The cutting tool and track system according to claim 1, wherein the cutting tool is an end mill.

Claim 11 (Canceled).

Claim 12 (Canceled).

Claim 13 (New). The cutting tool and track system according to claim 1, wherein the track member of one of the track elements consists a single, elongate solid body.

Claim 14 (New). The cutting tool and track system according to claim 1, wherein the track member of the at least one track element has generally planar top and bottom surfaces.

Claim 15 (New). The cutting tool and track system according to claim 1, wherein the track member comprises a solid and generally rectangular cross-section.

Claim 16 (New). A cutting tool and track system, comprising:

at least one track element configured to be attached to a surface of a workpiece, the track element including a track member and a rack member supported along the longitudinal length of the track member and defining a transport path;

a carriage assembly configured to ride along and to be guided and supported by the track element;

a carriage drive mechanism arranged to drivingly engage the carriage assembly and to drive the carriage assembly along the track element;

a cutting tool assembly carried by the carriage assembly, the cutting tool assembly including a cutting tool arranged to be rotated about a longitudinal axis and to be fed both

along its axis of rotation and transversely of its axis of rotation for cutting a workpiece through a wall thickness of the workpiece; and

a tool driving system connected to and arranged to transmit rotary input motion to the cutting tool;

wherein the carriage assembly comprises:

a carriage deck configured to carry the cutting tool assembly and having at least two threaded holes extending therethrough; and

at least two adjustable bearing assemblies received and retained by the threaded holes of the carriage deck, each bearing assembly including a pin element extending through a threaded sleeve member positioned in operative engagement with one of the threaded holes, and a plurality of conical compression-type springs, a first end of each of the pin elements engaging a bearing, the at least two bearing assemblies each including a retaining nut engaging the sleeve member and positionable against the carriage.

Claim 17 (New). A cutting tool and track system, comprising:

at least one track element configured to be attached to a surface of a workpiece, the track element including a track member and a rack member supported along the longitudinal length of the track member and defining a transport path;

a carriage assembly configured to ride along and to be guided and supported by the track element;

a carriage drive mechanism arranged to drivingly engage the carriage assembly and to drive the carriage assembly along the track element;

a cutting tool assembly carried by the carriage assembly, the cutting tool assembly including a cutting tool arranged to be rotated about a longitudinal axis and to be fed both along its axis of rotation and transversely of its axis of rotation for cutting a workpiece through a wall thickness of the workpiece; and

a tool driving system connected to and arranged to transmit rotary input motion to the cutting tool;

a feed assembly including an upper plate having an upper hole and arranged to connect to the cutting tool assembly, a ratchet assembly being positioned within the upper hole;

a lower plate having a lower hole and arranged to connect to the carriage assembly, a feed nut being positioned within the lower hole;

a feed screw extending through the upper hole and engaging the ratchet assembly, the feed screw engaging the feed nut of the lower hole; and

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a lever secured to the feed screw, the lever manipulable so as to rotate the feed screw to linearly displace the cutting tool assembly along its longitudinal axis.